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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RAMAKRISHNAIAH, MELUR

ART UNIT PAPER NUMBER

2643

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/954,619	Applicant(s) KOJOLA ET AL.	
	Examiner Melur Ramakrishnaiah	Art Unit 2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16, 18-23, 26-33 and 35-40 is/are rejected.
- 7) ☐ Claim(s) 15, 17, 24, 25 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9-15-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 8-10, 12, 23, 37-38, 40, are rejected under 35 U.S.C 102(e) as being anticipated by Krenz et al. (GB 2358991 A, hereinafter Krenz).

Regarding claim 1, Krenz discloses an integrated broadcast reception system for use in a handheld telecommunications device for receiving broadcast signals, wherein the hand-held telecommunications device has a device body, the reception system comprising: an electrically non-conductive substrate in (12, fig. 1) located inside the device body (12), an electrically conductive element (20, fig. 1), disposed on the substrate, for receiving the broadcast signals, and signal processing module (28, fig. 2) disposed on the substrate adjacent and electronically connected to one end of the

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electrically conductive element, responsive to the received signals, for processing the received signals (figs. 1, 7, page3, line 25 – page 7, line 28).

Regarding claim 23, Krenz discloses a mobile phone capable of receiving broadcast signals, comprising: a housing (figs. 5-6), an internal broadcast reception system (fig. 1), disposed with in the housing, wherein the reception system comprises: an electrically non-conductive substrate in (12, fig. 1) located inside the body, an electrically conductive element (20, figs. 1, 7), disposed on the substrate, for receiving the broadcast signals, and a signal processing module (28, fig. 1) disposed on the substrate adjacent and electronically connected to one of the electrically conductive element, responsive to received signals, for providing pre-processed signals, and means (26/32, fig. 1) responsive to the pre-processed signals, for providing audio signals indicative of broadcast signals (figs. 1, 7, page3, line 25 – page 7, line 28).

Regarding claims 2-3, 8-10, 12, 37-38, 40, Krenz further teaches the following: telecommunications device includes chassis (fig. 7) within the device body for disposing telecommunications components, wherein electrically non0conductive substrate is a part of the chassis, wherein the electrically non-conductive substrate is made of a rigid material (page 7 lines 24-28), electrically conductive is disposed on one side/both sides of the electrically non-conductive substrate , the electrically conductive element is wound around the electrically non-conductive substrate (figs. 1, 7), chassis within the housing for disposing and providing means, wherein the hand-held telecommunication device includes a chassis, and wherein the electrically non-conductive substrate is part of the chassis, electrically non-conductive substrate is made of a rigid material

mechanically linked to the chassis and integrated broadcast reception system is electronically linked to the chassis (fig. 1 and fig. 7, page 7 line 24-28), electrically conductive element has a meandering or wound shape for reducing the size of the electrically non-conductive substrate (figs. 1, 7).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-5, 11, 39, are rejected under 35 U.S.C. 103(a) as being unpatentable over Krenz in view of Lahti (US PAT: 6,028,567).

Regarding claims 4-5, Krenz does not explicitly teach the following: electrically non-conductive substrate is made of flexible material, electrically conductive element has a meandering shape for reducing the size of the electrically non-conductive substrate.

However, Lahti discloses antenna for a mobile station operating in two frequency ranges which teaches the following: electrically non-conductive substrate is made of flexible material (col. 4 lines 43-46), electrically conductive element has a meandering shape (22, fig. 2) for reducing the size of the electrically non-conductive substrate.

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Krenz's system to provide for the following: electrically non-conductive substrate is made of flexible material, electrically conductive element

has a meandering shape for reducing the size of the electrically non-conductive substrate as this arrangement would provide another means for compact arrangement of antenna in mobile station as taught by Lahti.

Regarding claim 11, Krenz teaches the following: electrically non-conductive element (figs. 5-6).

Krenz differs from claim 39 in that although he teaches substrate material mechanically linked to the chassis and integrated broadcast system is electronically linked to the chassis as shown in fig. 7, he does not teach the following: substrate material is made of a flexible material.

However, Lahti discloses antenna for a mobile station operating in two frequency ranges which teaches the following: electrically non-conductive substrate is made of flexible material (col. 4 lines 43-46).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Krenz's system to provide for the following: electrically non-conductive substrate is made of flexible material as this arrangement would provide another means for compact arrangement of antenna in mobile station as taught by Lahti.

5. Claims 6-7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Krenz in view of Casel (WO98/49742).

Regarding claims 6-7, Krenz does not teach the following: physical length of electrically conductive element is substantially smaller than a quarter wavelength of the

received signals, the physical length of the electrically non-conductive substrate is substantially smaller than quarter-wavelength of the received signals.

However, Casel discloses an antenna for radio communications which teaches the following: physical length of electrically conductive element is substantially smaller than a quarter wavelength of the received signals, the physical length of the electrically non-conductive substrate is substantially smaller than quarter-wavelength of the received signals (fig. 2, page 3 line 36, page 4 lines 1-3).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Krenz's system to provide for the following: physical length of electrically conductive element is substantially smaller than a quarter wavelength of the received signals, the physical length of the electrically non-conductive substrate is substantially smaller than quarter-wavelength of the received signals as this arrangement would facilitate to obtain the system to meet the requirements for the applications intended for as taught by Cassel.

6. Claims 14, 16 and 32, are rejected under 35 U.S.C. 103(a) as being unpatentable over Krenz in view of Ichikawa et al. (EP 0946011 A2, hereinafter Ichikawa).

Krenz differs from claims 14, 16, 32, in that although he teaches AM receiver (24, fig. 1), he does not teach the following: the broadcast signals are frequency-modulated, broadcast signals are digital broadcast signals.

However, Ichikawa discloses receiver for digital audio broadcast programs and FM broadcast programs which teaches the following: the broadcast signals are

frequency-modulated, broadcast signals are digital broadcast signals (col. 2 lines 35-50).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Krenz's system to provide for the following: the broadcast signals are frequency-modulated, broadcast signals are digital broadcast signals as this arrangement would facilitate the user to receive digital broadcast and FM broadcast signals as taught by Ichikawa, thus providing user with choice to receive required broadcast signals which provide better quality signals for the user to enjoy.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krenz in view of Auriol (US PAT: 5,134,422).

Regarding claim 13, Krenz does not teach the following: electrically conductive element has a helical shape.

However, Auriol discloses Helical type antenna which teaches the following: electrically conductive element has a helical shape (fig. 2, col. 3 lines 41-55).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Krenz's system to provide for the following: electrically conductive element has a helical shape as this arrangement would provide another means for processing the broadcast signals as taught by Auriol.

8. Claims 19-22, 26, 28-31, 33, 35-36, are rejected under 35 U.S.C. 103(a) as being unpatentable over Krenz in view of Shingematsu et al. (EP 0576012 A2, hereinafter Shingematsu).

Regarding claims 19-22, 26, 28-31, 33, 35-36, Krenz does not explicitly teach the following: signal processing module comprises an active circuit, responsive to received signals, for producing amplified signals, active circuit is controllable for adjusting a gain of the amplified signals, signal processing module comprises a band-tuning circuit, responsive to received signals, for selecting a broadcasting frequency band for providing band tuned signals, signal processing module further comprises an amplification device, responsive to band-tuned signals, for providing amplified signals, signals are digital broadcast signals providing means comprises a converter, responsive to the pre-processed signals, for providing signals in a digital form, wherein audio signals are provided based on signals in the digital form, providing means further comprises means for controlling the signal processing module for selecting a broadcast frequency band, wherein the pre-processed signals are indicative of the broadcast signals of the selected frequency band, providing means further comprises a broadcast channel in broadcasting frequency band, signal processing module comprises a band-tuning circuit, responsive to the received signals, for selecting a broadcasting frequency band.

However, Shingematsu discloses a digital broadcast receiver which teaches the following: signal processing module comprises an active circuit, responsive to received signals, for producing amplified signals, active circuit is controllable for adjusting a gain of the amplified signals, signal processing module comprises a band-tuning circuit, responsive to received signals, for selecting a broadcasting frequency band for providing band tuned signals, signal processing module further comprises an

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amplification device, responsive to band-tuned signals, for providing amplified signals, signals are digital broadcast signals providing means comprises a converter, responsive to the pre-processed signals, for providing signals in a digital form, wherein audio signals are provided based on signals in the digital form, providing means further comprises means for controlling the signal processing module for selecting a broadcast frequency band, wherein the pre-processed signals are indicative of the broadcast signals of the selected frequency band, providing means further comprises a broadcast channel in broadcasting frequency band, signal processing module comprises a band-tuning circuit, responsive to the received signals, for selecting a broadcasting frequency band (fig. 7, col. 8, line 39 –col. 9, line 40).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Krenz's system to provide for the following: signal processing module comprises an active circuit, responsive to received signals, for producing amplified signals, active circuit is controllable for adjusting a gain of the amplified signals, signal processing module comprises a band-tuning circuit, responsive to received signals, for selecting a broadcasting frequency band for providing band tuned signals, signal processing module further comprises an amplification device, responsive to band-tuned signals, for providing amplified signals, signals are digital broadcast signals providing means comprises a converter, responsive to the pre-processed signals, for providing signals in a digital form, wherein audio signals are provided based on signals in the digital form, providing means further comprises means for controlling the signal processing module for selecting a broadcast frequency band,

wherein the pre-processed signals are indicative of the broadcast signals of the selected frequency band, providing means further comprises a broadcast channel in broadcasting frequency band, signal processing module comprises a band-tuning circuit, responsive to the received signals, for selecting a broadcasting frequency band as this arrangement would provide necessary means for processing the broadcast signals selected for listening as taught by Shingematsu, thus providing user convenience to enjoy the broadcast signals.

9. Claims 15, 17-18, 24-25, 27, 34, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melur Ramakrishnaiah whose telephone number is (703) 305-1461. The examiner can normally be reached on M-F 6:30-4:00; every other F Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703)305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Melur Ramakrishnaiah
Primary Examiner
Art Unit 2643